UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,069	06/22/2001	Mikko Ohvo	P281445	1005

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EXAMINER
ABELSON, RONALD B

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/869,069	OHVO ET AL.
	Examiner	Art Unit	
	Ronald Abelson	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>28 April 2005</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,3-12,14,18,19,21 and 23-30</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) <u>5,8-11,19,25, and 30</u> is/are allowed.

6) ☒ Claim(s) <u>1,3,4,6,7,12,14,18,21,23,24 and 26-29</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>22 June 2001</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☒ All   b) ☐ Some *   c) ☐ None of:

   1. ☒ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Claim Objections

1.   Claim 12 is objected to because of the following

informalities: On line 12, "flow control" should be replaced by

"flow". Appropriate correction is required.

Claim 21 is objected to because of the following

informalities: On line 15, "flow control" should be replaced by

"flow". Appropriate correction is required.

Claim 26 is objected to because of the following

informalities: On line 11, "flow control" should be replaced by

"flow". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

3.   This application currently names joint inventors. In

considering patentability of the claims under 35 U.S.C. 103(a),

the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to

point out the inventor and invention dates of each claim that

was not commonly owned at the time a later invention was made in

order for the examiner to consider the applicability of 35

U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior

art under 35 U.S.C. 103(a).

4.   Claims 1, 3, 4, 6, 12, 14, 21, 23, 24, and 26-28 are

rejected under 35 U.S.C. 103(a) as being unpatentable over

applicant's admitted prior art 'AAPA' in view of Siu (US

6,252,851), Zhang (US 6,396,833) and further in view of Chow (US

5,495,471).

    Regarding claims 1, 12, 14, 21, 23, 24, and 26-28, AAPA

teaches transmitting data over a connection comprising a first

leg supporting flow control on a lower transmission protocol

level underlying the user level (fig. 1 see connection MS to

RAN, pg. 4 lines 3-18), an intermediate second leg not

supporting flow control on the lower transmission level (fig. 1

Iu, pg. 2 lines 34-36, pg. 4 lines 19-20), and a third leg

supporting flow control on the lower transmission protocol level

(fig. 1 see connection box 12 to PSTN/ISDN, pg. 4 lines 3-18).

Regarding claims 1, 12, 14, 21, 23, 24, and 26-28, AAPA is

silent on tunneling lower level flow control information as in-

channel signaling through the lower transmission protocol level

of the second leg between the first and third legs in order to

provide end-to-end flow control and thereby data integrity over

the connection on the lower transmission protocol layer.

Regarding claims 1, 12, 14, 21, 23, 24, and 26-28, Siu

teaches transmitting flow control through the lower level

transmission / ACK between a source network (TCP) and a

destination network (ATM) (fig. 1: ACKs, acknowledgments, col. 3

lines 6-26). The examiner corresponds the destination network of

the reference with the PSTN/ISDN/Packet Network of the applicant

and the source network with the RAN of the applicant.

Regarding claims 12, 21, and 26, AAPA is silent on starting

or stopping the flow being based on the status of a receiving or

a transmitting buffer in the first node or on incoming flow

control information received over the first leg.

Regarding claims 12, 21, and 26, Siu teaches starting or stopping the flow being based on incoming flow control information received over the first leg (fig. 1: ACKs, col. 3 lines 6-26). Note, as shown in Siu, use of ACK messaging is a well-known technique for starting or stopping the flow.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA to transmit ACK messages from the third leg to the first leg. This may be accomplished according to the teachings of Siu. This would enable the system to maintain flow control between the networks.

Although the combination teaches flow control between the source and destination network, the combination is silent on tunneling.

Zhang teaches tunneling between two networks to communicate even though there is a different network in between (col. 6 lines 11-13).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Siu by sending flow control information from between the first and third legs via a tunnel. The use of tunneling

would allows two hosts (AAPA: fig. 1 MS and PSTN/ISDN) to communicate even though a different network is in between.

Although the combination teaches tunneling lower level flow control information through the lower transmission protocol level of the second leg between the first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer, the combination is silent on the flow control information / ACK being transmitted using in-channel signaling / in-band signaling. Note, the examiner corresponds the applicant's in-channel signaling with in-band signaling.

Chow teaches flow control information / ACK being transmitted using in-channel signaling / in-band signaling (col. 19 lines 30-35).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Siu, and Zhang by transmitting the ACK signals using in-band signaling. This modification can be performed according to standards devised for in-band signaling. This would allow the system to transmit the signaling information on the same frequency band as the data and thus conserve bandwidth.

Regarding claim 12, the second leg is an ATM connection (AAPA: pg. 2 lines 34-36), and that said lower transmission protocol level includes an ATM adaptation layer (AAPA: pg. 3 lines 9-11).

Regarding claims 14, 21, 23, and 24, AAPA teaches a first node (fig. 1 box RNC) between the first and second legs and a second node (fig. 1 box 3G MSC) between the second and third legs.

Regarding claims 23, 24, and 27, AAPA teaches the first leg (fig. 1 see connection MS to RAN) is at the air interface between a mobile station and one of said network elements.

Regarding claim 24, AAPA teaches a network element / node (fig. 1 element Iu).

Regarding claim 27, AAPA teaches a radio network controller (fig. 1 box RAN).

Regarding claims 3 and 6, the second leg is an ATM connection (AAPA: pg. 2 lines 34-36), and that said lower

transmission protocol level includes an ATM adaptation layer

(AAPA: pg. 3 lines 9-11).

Regarding claim 4, encapsulating/tunneling the flow control

information in an ATM adaptation layer service data unit,

transporting the ATM adaptation layer service data unit to the

other end of the second leg according with an ATM network

protocol, and extracting the flow control information from the

ATM adaptation layer service data unit at said other end of the

second leg. Note, encapsulating/tunneling lower level flow

control information through the second leg, the second leg being

ATM, and the lower transmission protocol including an ATM

adaptation layer have previously been addressed.

Regarding claim 20, the system is a mobile communications

system (AAPA: fig. 1 MS), and that the first and second nodes

are network elements of the mobile communications system (fig. 1

box RNC, 3G MSC), and that the first leg is at the air interface

between the mobile station and one of said network elements

(fig. 1 see connection MS to RAN).

5.   Claims 7, 18, and 29 are rejected under 35 U.S.C. 103(a) as

being unpatentable over applicant's admitted prior art 'AAPA' in

view of Siu (US 6,252,851), Zhang (US 6,396,833) and further in view of Freeberg (US 5,987,018).

Regarding claims 7, 18 and 29, AAPA teaches transmitting data over a connection comprising a first leg supporting flow control on a lower transmission protocol level underlying the user level (fig. 1 see connection MS to RAN, pg. 4 lines 3-18), an intermediate second leg not supporting flow control on the lower transmission level (fig. 1 Iu, pg. 2 lines 34-36, pg. 4 lines 19-20), and a third leg supporting flow control on the lower transmission protocol level (fig. 1 see connection box 12 to PSTN/ISDN, pg. 4 lines 3-18).

AAPA is silent on tunneling lower level flow control information as out-of-traffic-channel signaling through the lower transmission protocol level of the second leg between the first and third legs in order to provide end-to-end flow control and thereby data integrity over the connection on the lower transmission protocol layer.

Siu teaches transmitting flow control through the lower level transmission / ACK between a source network (TCP) and a destination network (ATM) (fig. 1: ACKs, acknowledgements, col. 3 lines 6-26). The examiner corresponds the destination network

of the reference with the PSTN/ISDN/Packet Network of the

applicant and the source network with the RAN of the applicant.

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of AAPA to transmit ACK

messages from the third leg to the first leg. This may be

accomplished according to the teachings of Siu. This would

enable the system to maintain flow control between the networks.

Although the combination teaches flow control between the

source and destination network, the combination is silent on

tunneling.

Zhang teaches tunneling between two networks to communicate

even though there is a different network in between (col. 6

lines 11-13).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of the combination of

AAPA and Siu by sending flow control information from between

the first and third legs via a tunnel. The use of tunneling

would allows two hosts (AAPA: fig. 1 MS and PSTN/ISDN) to

communicate even though a different network is in between.

Although the combination teaches tunneling lower level flow

control information through the lower transmission protocol

level of the second leg between the first and third legs in

order to provide end-to-end flow control and thereby data

integrity over the connection on the lower transmission protocol

layer, the combination is silent on the flow control information

/ ACK being transmitted using out-of-traffic-channel signaling /

out-of-band signaling. Note, the examiner corresponds out-of-

traffic-channel signaling with out-of-band signaling.

Freeberg teaches flow control information / ACK being

transmitted using out-of-traffic-channel signaling / out-of-band

signaling (col. 8 lines 51-53).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of the combination of

AAPA, Siu, and Zhang by transmitting the ACK signals using out-

of-band signaling. This modification can be performed according

to standards devised for out-of-band signaling. This would allow

the system to transmit the signaling information on the same

frequency band as the data and thus all the data to be

transmitted using the entire frequency range of the data channel

as opposed to sharing bandwidth with signaling information.

Regarding claim 7, the second leg is an ATM connection

(AAPA: pg. 2 lines 34-36), and that said lower transmission

protocol level includes an ATM adaptation layer (AAPA: pg. 3 lines 9-11).

Regarding claim 29, AAPA teaches a first node (fig. 1 box RNC) between the first and second legs and a second node (fig. 1 box 3G MSC) between the second and third legs.

Response to Arguments

6.   Applicant's arguments with respect to amended independent claims 1, 7, 12, 14, 18, and 21, have been considered but are moot in view of the new ground(s) of rejection. Regarding new independent claims 23, 24, and 27-29, see rejection above.

Reasons for Allowance

7.   Claims 5, 8-11, 19, 25, and 30 are allowed.

The following is a statement of reasons for the indication of allowable subject matter.

Regarding claims 5 and 30, nothing in the prior art of the record teaches or fairly suggests inserting an octet or a bit or bits carry the flow control information in the ATM adaptation layer service data unit as the only payload information in the payload, or inserting an octet or a bit or bits carrying the flow control information with a limited amount of user data in the payload of the ATM adaptation layer service data unit, in view of the teachings of the prior art of record in combination with all the limitations listed in the claim.

Regarding claims 8, 10, 19, 25, nothing in the prior art of the record teaches or fairly suggests an ON request, in view of the teachings of the prior art of record in combination with all the limitations listed in the claim.

Regarding claim 11, nothing in the prior art of the record teaches or fairly suggests an OFF request, in view of the teachings of the prior art of record in combination with all the limitations listed in the claim.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,
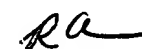
however, will the statutory period for reply expire later than

SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Ronald

Abelson whose telephone number is (571) 272-3165. The examiner

can normally be reached on M-F.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Seema Rao can be

reached on (571) 272-3174. The fax phone number for the

organization where this application or proceeding is assigned is

703-872-9306.

Information regarding the status of an application may be

obtained from the Patent Application Information Retrieval

(PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system,

see http://pair-direct.uspto.gov. Should you have questions on

access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ronald Abelson
Examiner
Art Unit 2666

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